Please substitute the following for pending Claim 9:

9. (Amended) A method of treating a rigid die insert to reduce crack propagation and raise yield stress therein, the rigid die insert comprising a nickel-base superalloy having a plurality of gamma-prime particles, each of the gamma-prime particles having a particle size, the method comprising the steps of:

a) providing the rigid die insert;

b) dissolving gamma-prime particles having a first particle size, by:

i) heat treating the rigid die insert in an inert atmosphere to a first predetermined temperature for a first predetermined hold time, the first predetermined temperature being a sub-solvus temperature of the nickel-base alloy; and

ii) quenching the rigid die insert to room temperature in a room temperature bath; and

c) growing additional gamma-prime particles in the rigid die insert, wherein each of the additional gamma-prime particles has a second particle size, the second particle size being smaller than the first particle size,

wherein the particle size of each of the plurality of gamma-prime particles is refined to produce a uniform size distribution of the gamma-prime particles, thereby reducing crack propagation and raising the yield stress of the rigid die insert.

Please substitute the following for pending Claim 11:

11. (Amended) The method of Claim 9, further including the step of forced-air cooling the rigid die insert after the step of heat treating the rigid die insert to a first predetermined temperature.

Please substitute the following for pending Claim 12:

12. (Amended) The method of Claim 9, wherein the inert atmosphere is an argon atmosphere.

Please substitute the following for pending Claim 13:

13. (Amended) The method of Claim 9, wherein the step of quenching the rigid die insert to room temperature in a room temperature bath comprises quenching the rigid die insert to room temperature in a room temperature oil bath.

Please substitute the following for pending Claim 14:

14. (Amended) The method of Claim 9, wherein the step of growing additional gamma-prime particles in the rigid die insert comprises aging the rigid die insert in an inert atmosphere at a second predetermined temperature for a second predetermined hold time.

Please substitute the following for pending Claim 16:

16. (Amended) A method of refining the particle size of gamma-prime particles in a Rene 95 superalloy, the method comprising the steps of:

a) providing a Rene 95 superalloy;

b) heating the Rene 95 superalloy in an inert atmosphere to a first temperature, the first temperature being a temperature below a solvus temperature of the Rene 95 superalloy;

c) quenching the Rene 95 superalloy to room temperature in a bath, thereby dissolving gamma-prime particles, in the Rene-95 superalloy, wherein each of the gamma-prime particles has a first particle size; and

d) aging the Rene 95 superalloy after quenching in an inert atmosphere at a second predetermined temperature for a second predetermined hold time,

thereby growing additional gamma-prime particles, wherein each of the additional gamma-prime particles has a second particle size that is less that the first particle size, and wherein a uniform size distribution of gamma-prime particles is created.

Please substitute the following for pending Claim 18:

18. (Amended) The method of Claim 16, wherein the step of quenching the Rene 95 superalloy to room temperature in a bath comprises quenching the Rene 95 superalloy in a room temperature oil bath.

Please substitute the following for pending Claim 19:

19. (Amended) The method of Claim 16, wherein the step of aging the Rene 95 superalloy in an inert atmosphere at a second predetermined temperature for a second predetermined hold time comprises heating the Rene 95 up to about 1400°F for about 16 hours.

Please substitute the following for pending Claim 21:

21. (Amended) A method of treating a rigid die insert to reduce crack propagation and raise yield stress, the rigid die insert comprising a Rene 95 superalloy having a plurality of gamma-prime particles, each of the gamma-prime particles having a particle size, the method comprising the steps of:

a) providing the rigid die insert;

b) heating the rigid die insert in an inert atmosphere to a first temperature for a first predetermined hold time, the first temperature being a temperature below a solvus temperature of the Rene 95 superalloy;

c) forced-air cooling the rigid die insert;

d) quenching the rigid die insert at room temperature in a bath, thereby dissolving gamma-prime particles in the Rene-95 superalloy, wherein each of the gamma-prime particles has a first particle size; and

e) aging the rigid die insert in an inert atmosphere at a second predetermined temperature for a second predetermined hold time,

wherein the particle size of each of the plurality of gamma-prime particles is refined and a uniform size distribution of gamma-prime particles is created, thereby reducing crack propagation and raising the yield stress of the rigid die insert.

Please substitute the following for pending Claim 24:

24. (Amended) The method of Claim 21, wherein the step of aging the rigid die insert in an inert atmosphere at a second predetermined temperature for a second predetermined hold time comprises heating the rigid die insert up to about 1400°F for about 16 hours.

REMARKS

Applicants appreciate the consideration shown by the Office, as evidenced by the most recent Office Action, mailed on June 20, 2002. In that Office Action, Claims 9-25 were rejected by the Examiner. Claims 1-8 have been withdrawn from consideration, and Claim 10 has been canceled, without prejudice. As such, Claims 1-9 and 11-25 remain in the case with none of the claims being allowed.

The June 20 Office Action has been carefully considered. After such consideration, Claim 10 has been canceled, without prejudice, and Claims 9, 11-14, 16, 18, 19, 21, and 24 have been amended. Applicants respectfully request reconsideration of the application by the Examiner in light of the above amendments and the following remarks offered in response to the June 20 Office Action.

Rejections under 35 U.S.C. §112, second paragraph

The Examiner has rejected Claims 9-25 under 35 U.S.C. §112, second paragraph, as being indefinite.

The Examiner states that the wording "larger" and "smaller" appearing in Claims 9, 14, 16, and 21 is indefinite, as it fails to define the gamma-prime size of the particle.